Curriculum Vitae

Dr. Rick Lumpkin
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Research Interests: Upper ocean dynamics, observations of mesoscale to basin-scale circulation; pathways and physics of the global thermohaline circulation; interannual to decadal variations in ocean climate.

Current projects: Principal Investigator, Surface Drifter Program (AOML's component of NOAA's Global Drifter Program); Principal Investigator, Evaluating the Ocean Observing System: Sea Surface Velocity. Co-PI or collaborator in projects investigating the global distribution of inertial oscillations and processes affecting near-surface salinity budgets.

Committees, panels and memberships: United States focal point for Data Buoy Cooperation Panel (DBCP); Vice-chair (North America) of DBCP executive board; chair, DBCP Global Drifter Program; co-chair, DBCP task team on instrument best practices. Member: Climate.gov Science Advisory Panel; CLIVAR Tropical Atlantic Climate Experiment working group on observations; GlobCurrent Science Team; American Geophysical Union.

Education:

1998 Ph.D. in Oceanography, Univ. of Hawaii at Manoa
1995 M.S. in Oceanography, Univ. of Hawaii at Manoa
1991 B.S. in Physics (Mathematics minor), North Carolina State Univ.

Positions held:

July 2015-	Deputy Director, Phys. Oceanogr. Division, NOAA/AOML
2004- 2015	Oceanographer, NOAA/AOML
2002-2004	Assistant scientist, CIMAS (Univ. Miami)
2000-2002	Assistant in research, Dept. Oceanogr., Florida State Univ.
1998-2000	Postdoctorate, Laboratoire de Physique des Océans, IFREMER/CNRS
1996-1998	Graduate Assistant, Dept. Oceanogr., Univ. of Hawaii
1995-1996	Teaching Assistant, Dept. Oceanogr, Univ. of Hawaii
1991-1995	Graduate Assistant, Dept. Oceanogr, Univ. of Hawaii

Awards:

NOAA/OAR (NOAA research) Employee of the Year, 2013.
Three 2009 NOAA Bronze Medals, for (1) developing the research-to-operation transition of Climate Sea Surface Temperature Observing System monitoring, (2) exceptional service as author of the NOAA/Smithsonian publication "Hidden Depths: Atlas of the Ocean", and (3) remarkable contributions and original concepts in the design and leverage of the Smithsonian's Sant Ocean Hall.
Recipient of Ministère des Affaires Etrangères fellowship from French government, 1998—1999.

Sea-going experience:

Chief scientist, 2014 PIRATA Northeast Extension cruise, R/V *Endeavor*, 29 Dec 2014 – 11 February 2015.
Chief scientist, 2011 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 19 July – 22 August 2011.
Chief scientist, 2009 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 11 July – 11 August 2009.
Chief scientist, 2007 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 2—31 May 2007.
Watch leader, CLIMODE-4 leg 1, R/V Knorr, 7—27 February 2007.
Chief scientist, 2006 PIRATA Northeast Extension cruise, NOAA ship *Ronald H. Brown*, 27 May – 18 June 2006.
Watch leader, Western Boundary Time Series cruise, NOAA ship *Ronald H. Brown*, 3—16 February 2003.
Designed, assembled, deployed and recovered current meter moorings off Maui and Oahu; chief scientist of recovery cruise.
Participant, WOCE section P18 leg 3, 29 March – 27 April 1994.

Teaching experience:

Current member of Ph.D. committees for Lucas Laurindo and Rafael Gonçalves (Univ. Miami).
Past member of Ph.D. committees for Tania Casal, Greta Leber, Matt Archer and Thania Papapostolou (Univ. Miami).
Invited lecure, University of South Florida School of Marine Science, 25 September 2015.
Invited panelist, 21 February 2013 "Climate Science Café" hosted by the CLEO institute, Pinecrest, FL.
Invited lecture, 2011 Fritz Schott memorial lecture series, IFM-GEOMAR (Kiel, Germany).
Designed and taught data analysis exercises to Nigerian researchers and operational forecasters as part of the US Navy's Africa Partnership Station, March 2009 (Legos, Nigeria).
Presented lectures for undergraduates on M/V *Explorer* (Semester At Sea Program) and at City College of New York, lectures for the general public on Royal

Caribbean's *Explorer of the Seas*, and lectures for school children at Shake-A-Leg Miami and AOML.

Invited lecturer, 2005 Lagrangian Summer School at the University of Rhode Island (Tom Rossby and Andrew Bennett, organizers).

Assisted teaching and grading two courses during graduate studies. Led instruction during waves portion of Introduction to Geophysical Fluid Dynamics class.

Publications: ResearcherID h-index: 26

2017

Submitted

Foltz, G., C. Schmid, and R. Lumpkin. An enhanced PIRATA data set for tropical Atlantic ocean-atmosphere research. Revision submitted to *J. Climate* April 2017.

Lumpkin, R. and L. Centurioni: Surface Drifter Observations in the Indian Ocean. Submitted to *CLIVAR Indian Ocean IndOOS review white paper* June 2017.

Accepted / In Press

Lumpkin R., G. Goni and K. Dohan: State of the Ocean in 2016: Surface Currents. In "State of the Climate in 2016", *Bull. Am. Meteorol. Soc.*

Published

Beron-Vera, J., J. Olascoaga, and R. Lumpkin, 2017: Inertia-induced accumulation of flotsam in the subtropical gyres. *Geophys. Res. Lett.*, **43** (23), 12228—12233, http://dx.doi.org/10.1002/2016GL071443.

Centurioni, L., A. Horanyi, C. Cardinali, E. Charpentier and R. Lumpkin: A Global Observing System for Measuring Sea Level Atmospheric Pressure: Effects and Impacts on Numerical Weather Prediction. *Bull. Am. Meteorol. Soc.*, **98** (2), 231—238, http://dx.doi.org/10.1175/BAMS-D-15-00080.1.

Dong, S., D. Volkov, G. Goni, R. Lumpkin, and G. Foltz: Near-surface salinity and temperature structure observed with dual-sensor drifters in the subtropical South Pacific. *J. Geophys. Res.*, **122**, http://dx.doi.org/10.1002/2017JC012894.

Laurindo, L. C., A. Mariano, and R. Lumpkin: An improved surface velocity climatology for the global ocean from drifter observations. *Deep-Sea Res. I*, **124**, 73—92, http://dx.doi.org/10.1016/j.dsr.2017.04.009.

Volkov, D., S.-K. Lee, W. Landerer, and R. Lumpkin: Decade-long deep-ocean warming detected in the subtropical South Pacific. *Geophys. Res. Lett.*, **44**, 927-936, http://dx.doi.org/10.1002/2016GL071661

2016

Elipot, S., R. Lumpkin, R. Perez, J. Lilly, J. Early, and A. Sykulski: A global surface drifter data set at hourly resolution. *J. Geophys. Res.-Oceans*, **121** (5), 2937-2966, http://dx.doi.org/10.1002/2016JC011716.

Kourafalou, V. H., Y. S. Androulidakis, G. Halliwell, H. Kang, M. Mehari, M. Le Hénaff, R. Atlas, and R. Lumpkin, 2016: North Atlantic Ocean OSSE system development: Nature Run evaluation and application to hurricane interaction with the Gulf Stream. *Progress in Oceanography*, **148**, 1—25.

Lumpkin, R., 2016: Global Characteristics of Coherent Vortices from Surface Drifter Trajectories. *J. Geophys. Res.-Oceans*, **121**, 1306–1321, http://dx.doi.org/10.1002/2015JC011435.

Lumpkin, R., L. Centurioni and R. C. Perez, 2016: Fulfilling Observing System Implementation Requirements with the Global Drifter Array. *J. Atmos. Oceanic Technolog.*, **33**, 685—695, http://dx.doi.org/10.1175/JTECH-D-15-0255.1.

Lumpkin R., G. Goni and K. Dohan: State of the Ocean in 2015: Surface Currents. In "State of the Climate in 2015", *Bull. Am. Meteorol. Soc.,* 97 (8): S82—S84, ed. G. C. Johnson and A. R. Parsons.

Lumpkin R**.,** T. Özgökmen, and L. Centurioni, 2016: Advances in the applications of surface drifters. *Annu. Rev. Mar. Sci.,* **9**, 59-81, http:/dx.doi.org/10.1146/annurev-marine-010816-060641.

Putman, N. F., R. Lumpkin, A. E. Sacco, and K. L. Mansfield: Passive drift or active swimming in marine organisms? *Proceedings R. Soc. B.*, **283**, 20161689, http://dx.doi.org/10.1098/rspb.2016.1689.

2015

Dohan, K., G. Goni and R. Lumpkin, 2015: State of the Ocean in 2014: Surface Currents. In "State of the Climate in 2014", *Bull. Am. Meteorol. Soc.*, ed. G. Johnson and R. Parsons.

Dong, S., G. Goni and R. Lumpkin, 2015: Mixed-layer salinity budget in the SPURS region on seasonal to interannual time scales and its link to large-scale dynamics. *Oceanography*, **28** (1), 28—35, http://dx.doi.org/10.5670/oceanog.2015.05.

Foltz, G., C. Schmid and R. Lumpkin, 2015: Transport of surface freshwater from the equatorial to the subtropical North Atlantic Ocean. *J. Phys. Oceanogr.*, **45** (4), 1086—1102, http://dx.doi.org/10.1175/JPO-D-14-0189.1.

Legler, D., H. J. Freeland, R. Lumpkin, G. Ball, M. J. McPhaden, S. North, R. Cowley, G. Goni, U. Send and M. Merrifield, 2015: The current status of the real-time in situ global ocean observing system for operational oceanography. *J. Operational Oceanography*, **8** (S2), 189-200, http://dx.doi.org/10.1080/1755876X.2015.1049883.

Peng, S., Y.-K. Qian, R. Lumpkin, Y. Du, D. Wang and P. Li, 2015: Characteristics of the Near-Surface Currents in the Indian Ocean as deduced from Satellite-Tracked Surface Drifters. Part I: Pseudo-Eulerian Statistics. *J. Phys. Oceanogr.*, 45 (2), 441-458, http://dx.doi.org/10.1175/JPO-D-14-0050.1.

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2014

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Perez, R., V. Hormann, R. Lumpkin, P. Brandt, W. E. Johns, F. Hernandez, C. Schmid and B. Bourlès, 2014: Mean meridional currents in the central and eastern equatorial Atlantic. *Climate Dynamics*, **43**, 2943-2962, http://dx.doi.org/10.1007/s00382-013-1968-5.

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2012

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Lumpkin, R., N. Maximenko and M. Pazos, 2012: Evaluating where and why drifters die. *J. Atmos. Ocean. Techn.*, **29** (2), 300—308, http://dx.doi.org/10.1175/JTECH-D-11-00100.1.

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2011

Dong, C., Y. Liu, R. Lumpkin, M. Lankhorst, D. Chen, J. McWilliams and Y. Guan, 2011: A Scheme to Identify Loops from Trajectories of Oceanic Surface Drifters: Application to the Kuroshio Extension Region. *J. Atmos. Ocean. Techn.*, **28**, 1167–1176, http://dx.doi.org/10.1175/JTECH-D-10-05028.1.

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Lumpkin R., G. Goni and K. Dohan, 2011: State of the Ocean in 2010: Surface Currents. In "State of the Climate in 2010", J. Blunden, D. S. Arndt and M. O. Baringer (eds), *Bull. Am. Meteorol. Soc.*, **92**, S92-S95.

Lumpkin, R. and S. L. Garzoli, 2011: Interannual to Decadal Variability in the Southwestern Atlantic's Surface Circulation. *J. Geophys. Res.-Oceans*, **116**, C01014, http://dx.doi.org/10.1029/2010JC006285.

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2010

Brassington, G. B., N. Summons and R. Lumpkin, 2010: Observed and simulated Lagrangian and eddy characteristics of the East Australian Sea and Tasman Sea. *Deep-Sea Res. II*, **58**, 559—573, http://dx.doi.org/10.1016/j.dsr2.2010.10.001.

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2009

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2006

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2005

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Pre-2005

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